

### REMARKS

Claims 1-6 and 8-19 are pending. Claim 7 has been canceled. Claim 20 has been added. Claims 13-19 have been withdrawn.

The Examiner rejected the following claims under 35 U.S.C. §103(a): Claims 1-5, 8, 9, and 12 over U.S. Patent No. 3,990,421 to Grainger ("Grainger '421"); Claims 6, 10, and 11 over Grainger '421 in view of U.S. Patent No. 4,809,595 to Fischer ("Fischer '595"); and Claim 7 over Grainger '421 in view of U.S. Patent No. 4,691,681 to Hoppner et al. ("Hoppner et al. '681").

Grainger '421 discloses engine 80, shown in Figs. 8-13, including air blower impeller 89 (Figs. 12 and 13) which "causes a flow of air under pressure in conduits 90, 91 which extends from the blower 92". (col. 4, lines 14-16). Referring to only one side of the engine, conduit 90 conveys air to heat exchanger 94 which surrounds exhaust manifold 95 (Figs. 9 and 10). Exhaust manifold 95 has a plurality of ports 96 (Fig. 10) therein so that air flowing into heat exchanger 94 from conduit 90 can flow into exhaust burners (not shown) within exhaust manifold 95. Another portion of the heated air flows outwardly from heat exchanger 94 through conduit 97 into air cleaner 98 and carburetor 99. Additionally, a portion of the air from conduit 97 passes through conduit 104 into venting air injector 102 for injection into the exhaust stream through injector apertures 112 and 113 (Fig. 11).

Fischer '595 is cited for muffler 4, shown in Fig. 2, wherein heat from muffler 4 is used to heat air passing through intake air line 27. Hoppner et al. '681 is cited for cover 8 and/or wall 10 of engine 2 which covers cylinder 7.

Amended independent Claim 1 calls for an internal combustion engine, including, *inter alia*, a blower driven by a crankshaft to generate an air stream; a pair of first and second cylinders; and an intake air heating arrangement, including a heater box disposed proximate a first cylinder, an interior of the heater box in airflow communication with the air stream; and a cylinder wrap at least partially enclosing the first cylinder, the first cylinder and the cylinder wrap defining an air passage in airflow communication with the heater box through which the air stream is conducted.

Amended independent Claim 9 calls for a method of heating intake air in an engine, including the steps of generating an air stream, and conducting the air stream between at least one cylinder and a cylinder wrap at least partially enclosing the cylinder to heat air within the air stream.

Independent Claims 1 and 9 have been amended to incorporate the subject matter of canceled Claim 7. With respect to Claim 7, the Examiner acknowledged that Grainger '421 fails to disclose a cylinder wrap at least partially enclosing a cylinder and defining an air passage through which an air stream is conducted, but asserted that it would have been obvious to modify Grainger to include a cylinder wrap, *i.e.*, cover 8 and/or wall 10 of Hoppner et al. '681, at least partially enclosing a cylinder to define an air passage through which an air stream is conducted on its way to the heater box in order to provide additional heating to the intake air stream.

Applicants respectfully submit that, to the contrary, one of ordinary skill in the art, having no knowledge of Applicants claimed invention, would not modify Grainger '421 in the manner relied upon by the Examiner.

First, one of ordinary skill in the art would not replace conduit 90 with a cylinder wrap to define an air passage between the cylinder wrap and one of the engine cylinders because conduit 90 of the Grainger '421 engine directly connects blower 89 to heat exchanger 94 to provide a flow of air under pressure (col. 4, line 15) to heat exchanger 94. In particular, one of ordinary skill in the art would understand that in the Grainger '421 engine, a relatively large amount of air under pressure is necessary to provide enough air to supply the exhaust burners within exhaust manifold 95 and additionally, to supply both a stream of intake air directly to carburetor 99 and a stream of air to venting air injector 102. As may be seen from Figs. 8-13, blower 92 and conduit 90 together provide an arrangement by which air under pressure may be conveyed directly from blower 92 via conduit 90 to heat exchanger 94 and the air intake system of the engine, and one of ordinary skill in the art would not modify the foregoing arrangement in favor of an air passage defined between a cylinder wrap and one of the cylinders of the engine.

Second, one of ordinary skill in the art would have no motivation to add a cylinder wrap to the engine of Grainger '421. As noted above, in the Grainger '421 engine, air under pressure is supplied directly to heat exchanger 94 via conduit 90, and the air is heated within heat exchanger 94 before passing via conduit 97 to carburetor 99. The Examiner cites a motivation of "provid[ing] additional heating to the intake air stream", however, as may be seen from Fig. 8, heat exchanger 94 itself runs nearly the entire length of the engine cylinders for heating the intake air, such that any additional structure, such as a cylinder wrap defining an air passage through which an air stream would flow would be unnecessary and redundant in view of the operation of the air intake system of Grainger '421.

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For the foregoing reasons, Applicants respectfully submit that one of ordinary skill in the art, having no knowledge of Applicants claimed invention, would not modify Grainger '421 in the manner relied upon by the Examiner.

Thus, Applicants respectfully submit that independent Claims 1 and 9, as well as Claims 2-6, 8, and 10-12 which depend therefrom, are patentable over the cited prior art.

New Claim 20 depends from independent Claim 1, and calls for the V-space defined between the first and second cylinders to be substantially enclosed by portions of the engine. By contrast, the engine shown in Fig. 8 of Grainger '421 includes a V-space, defined between the two banks of cylinders, which appears to be open at its front end, rear end, and top.

It is believed that the above represents a complete response to the Official Action and reconsideration is requested. Specifically, Applicants respectfully submit that the application is in condition for allowance and respectfully request allowance thereof.

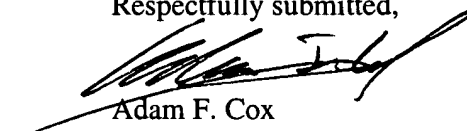
In the event Applicants have overlooked the need for an additional extension of time, payment of fee, or additional payment of fee, Applicants hereby petition therefore and authorize that any charges be made to Deposit Account No. 02-0385, Baker & Daniels.

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Should the Examiner have any further questions regarding any of the foregoing, she is respectfully invited to telephone the undersigned at (260) 424-8000.

Respectfully submitted,



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I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on: February 14, 2006

ADAM F. COX, REG. NO. 46,644

Name of Registered Representative



Signature

February 14, 2006

Date